

Serial No. 10/664,869
Docket No.: 358.39731XV1
ONO.016DIV

REMARKS

Applicant concurrently files herewith a petition and fee for a one-month extension of time.

Claims 1, 2, 6, and 8-13 are presently pending in the application. Claims 1, 6, and 10 have been amended to more particularly define the invention. Claims 12 and 13 have been added to assure Applicant the degree of protection to which his invention entitles him. Claims 3-5 and 7 have been cancelled in the interest of expediting prosecution.

THE 35 U.S.C. §112, SECOND PARAGRAPH REJECTION

Claims 10-11 were rejected under 35 U.S.C. §112, second paragraph, as due to a lack of antecedent in claim 10. The above amendments correct this.

THE 35 U.S.C. §103(a) REJECTION

Claims 1-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Beck et al., U.S. Patent No. 5,297,688. This rejection is respectfully traversed.

THE CLAIMED INVENTION

The claimed invention is directed to a synthetic resin container closure 2 for closing a container having a mouth-neck portion 50 with an internal diameter D4. The container closure includes a circular top panel wall 4; a cylindrical skirt wall 6 extending downwardly from the peripheral edge of the top panel wall; an outer cylindrical sealing protrusion 32, 132 extending downwardly from the inner surface of the top panel wall; an inner cylindrical

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sealing protrusion 34, 134 extending downwardly from the inner surface of the top panel wall; and an annular sealing ridge 36, 136 located between the outer cylindrical sealing protrusion and the inner cylindrical sealing protrusion and projecting downwardly from the inner surface of the top panel wall. The thickness of the inner cylindrical sealing protrusion 34, 134 gradually decreases as the inner cylindrical sealing protrusion extends downwardly from the inner surface of the top panel wall.

When the container closure is mounted on the mouth-neck portion of the container, the inner peripheral surface of the outer cylindrical sealing protrusion is in close contact with the outer peripheral surface of the mouth-neck portion, the outer peripheral surface of the inner cylindrical sealing protrusion is in close contact with the inner peripheral surface of the mouth-neck portion, and the annular sealing ridge is in close contact with the top surface of the mouth-neck portion.

In some exemplary embodiments, the inner peripheral surface of the outer cylindrical sealing protrusion extends downwardly with an outward inclination at an angle θ_6 with respect to the center axis of the container closure and then extends downwardly and radially outwardly in an arc form.

In some exemplary embodiments, $0.05 \text{ mm} \leq (D2 - D1) \leq 0.60 \text{ mm}$., where D1 is the minimum internal diameter of the outer cylindrical sealing protrusion, and D2 is the external diameter of the mouth-neck portion of the container.

In some exemplary embodiments, $0.25 \text{ mm} \leq (D3 - D4) \leq 1.50 \text{ mm}$., where D3 is the maximum external diameter of the inner cylindrical sealing protrusion, and D4 is the internal diameter of the mouth-neck portion of the container.

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In some exemplary embodiments, the outer peripheral surface of the inner cylindrical sealing protrusion extends downwardly with an outward inclination at an angle θ_1 with respect to the center axis of the container closure and then extends downwardly with an inward inclination at an angle θ_2 with respect to the center axis. The inclination angle θ_1 is 5° to 25° and the inclination angle θ_2 is 5° to 30° . The inner peripheral surface of the inner cylindrical sealing protrusion extends downwardly with an outward inclination at an angle θ_3 with respect to the center axis, and then extends substantially parallel with the center axis. The inclination angle θ_3 of the inner peripheral surface of the inner cylindrical sealing protrusion is larger than the inclination angle θ_1 of the outer peripheral surface of the inner cylindrical sealing protrusion at a position above the position having the maximum external diameter D3.

THE BECK REFERENCE

Beck et al. discloses a closure for sealing a container rim. The closure includes a circular top panel wall 22; a cylindrical skirt wall 26 extending downwardly from the peripheral edge of the top panel wall; an outer cylindrical sealing protrusion 36 extending downwardly from the inner surface of the top panel wall; an inner cylindrical sealing protrusion 40 extending downwardly from the inner surface of the top panel wall; and an annular sealing ridge 38 located between the outer cylindrical sealing protrusion and the inner cylindrical sealing protrusion and projecting downwardly from the inner surface of the top panel wall. The thickness of the inner cylindrical sealing protrusion 40 gradually increases as the inner cylindrical sealing protrusion extends downwardly from the inner surface of the top

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panel wall.

ARGUMENT

Because the thickness of the inner cylindrical sealing protrusion 34, 134 of the container closure of the claimed invention gradually decreases as the inner cylindrical sealing protrusion extends downwardly from the inner surface of the top panel wall, the container closure is easily taken out from the mold during the manufacturing process. See the specification at paragraph 0030 (page 27) and paragraph 0041 (pages 42-43). This significantly aids in the manufacturing process.

As can be understood from Beck's Figures 2-4, the thickness of the inner cylindrical sealing protrusion 40 of his container closure gradually increases as the inner cylindrical sealing protrusion extends downwardly from the inner surface of the top panel wall. This makes the container closure more difficult to remove from the mold during the manufacturing process.

All of the claims include that the thickness of the inner cylindrical sealing protrusion of the container closure of the claimed invention gradually decreases as the inner cylindrical sealing protrusion extends downwardly from the inner surface of the top panel wall. Thus, all of the claims distinguish over Beck in an unobvious manner.

CONCLUSION

In view of the foregoing, Applicant submits that claims 1, 2, 6, and 8-13, all the claims presently pending in the application, are patentably distinct over the prior art of record

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and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

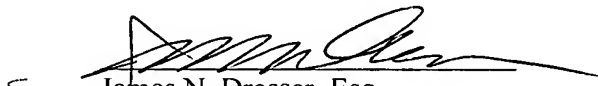
Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date:

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